

Wildlife Corridors

A wildlife corridor is a link of vegetation that joins two or more areas of habitat. Often referred to as ‘linkages in the landscape’, corridors play an important role in the maintenance of ecological processes. These landscape connections enable migration, colonisation and interbreeding of plants, animals and fungi. This Note explores the attributes and values of corridors and identifies ways in which landholders can maintain, enhance or re-create corridors on their properties.



A satellite image of a Land for Wildlife property in the Chinchilla district shows patches of vegetation that form important corridors whilst also providing shade and shelter for stock.

Why are corridors important?

Wildlife corridors:

- Allow the movement of birds, reptiles, mammals, frogs, invertebrates, plant seeds and fungal spores.
- Provide habitat for migratory and resident wildlife.
- Provide refuge for wildlife that use nearby limited-value habitat such as open paddocks.
- Allow species to re-colonise patches of vegetation.
- Enable the exchange of genes between wildlife populations and reduce the possibility of inbreeding.
- Maintain species richness at patch and landscape scales.
- Can help maintain ecosystem processes such as pollination.

Habitat loss and fragmentation are the two main contributors to continuing biodiversity decline across the landscape. When native vegetation is cleared, fragmented patches or islands of vegetation are created resulting in the isolation of many plant and animal species. This in turn reduces the viability of ecosystems and the populations of species within them. Ultimately, this can result in severe biodiversity decline and local extinctions. Taking a landscape view across both public and private lands can highlight where wildlife corridors are required to re-connect fragmented patches of vegetation.

Types of corridors

Corridors are often categorised according to scale and can range from national significance, with corridors being many kilometres wide, to a property scale corridor that may only be less than 20 metres in width.

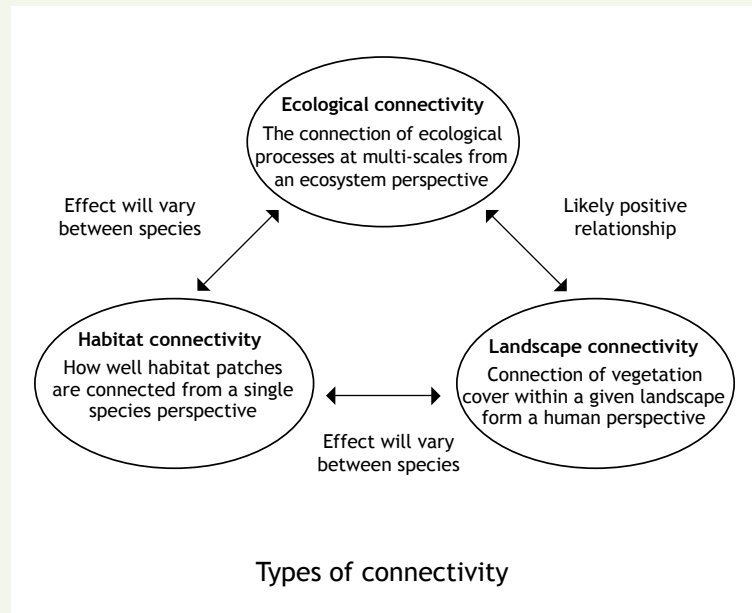
Riparian corridors or stream buffers can be particularly effective at providing habitat connectivity for many species, as well as contributing to ecological connectivity. They often provide habitat for large numbers of terrestrial and aquatic fauna and flora species.

Stepping stone corridors are relatively small patches of native vegetation scattered throughout a landscape that can provide some connectivity for a variety of species. As with all corridors, stepping stones can exist at a variety of scales ranging from single trees to patches covering some hectares. Stepping stones in some studies appeared to be just as effective as continuous corridors for facilitating movement of some native species between habitat patches. Small areas of vegetation and even single trees, whilst appearing insignificant, can still play an important role in connecting areas of habitat.

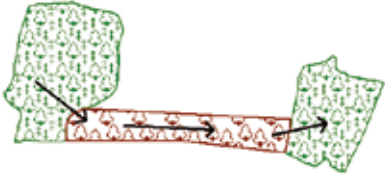
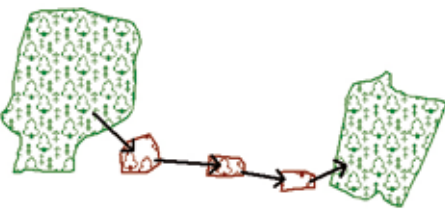
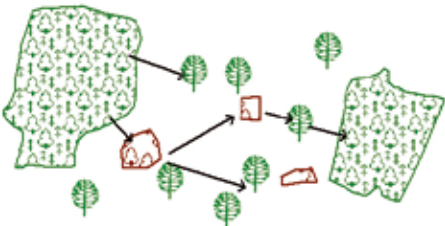
Types of connectivity

The term 'connectivity' can be used in a number of ways including habitat connectivity, landscape connectivity and ecological connectivity (see figure right). The way that these types of connectivity are inter-related is illustrated below. Although these three connectivity concepts are inter-related, they are not the same as one another. For instance, landscape connectivity may increase habitat connectivity for some species but not for others.

For example, edge attracted species such as some parrots and possums can flourish in narrow corridors because the longer boundaries create suitable habitat for them. Other species that require larger areas of intact habitat may decline or become locally extinct if their requirements are not met.



Types of corridors

 <p>Continuous corridor</p>	 <p>Stepping stone corridor comprised of vegetation patches</p>	 <p>Stepping stone corridor comprised of isolated trees and small patches</p>
<p>Some wildlife species have difficulty living in or moving through a developed landscape. They require a continuous link of suitable habitat between two vegetation patches in order to safely move across the landscape. Examples of animals that require continuous corridors include small mammals, small reptiles, some ground-dwelling birds and non-flying invertebrates.</p>	<p>One or more 'stepping stones' of suitable habitat may be sufficient to allow some wildlife to move through a relatively developed landscape. Examples of animals that can use this type of corridor include highly mobile birds such as cuckoos, fruit pigeons and lorikeets, flying foxes and flying insects.</p>	<p>A mosaic of natural and modified vegetation (such as scattered trees in paddocks) may be sufficient for some wildlife species to move through an area. These species are tolerant of land uses in the surrounding environment. Examples of animals that can use isolated trees as stepping stones include some kangaroos, wallabies and common open-paddock birds such as magpies.</p>



Effectiveness of corridors

The three key factors that influence the effectiveness of corridors for certain types of wildlife are connectivity, composition and configuration. Before planning a corridor, consider what species you are trying to assist.

1. Connectivity - can be achieved by corridors or stepping stones. Research indicates that the space between stepping stones or corridors should not extend for more than about 1 km before connecting to another patch of vegetation that is at least 1 ha in size.

2. Composition - or structure of the vegetation is an important consideration as it can influence which species of wildlife can use the corridor. The more structural variety provided (e.g. trees, shrubs, fallen branches, leaf litter, groundcover and rocks) ensures that a greater diversity of wildlife species will be able to use the corridor.

3. Configuration - the size, shape and location of patches in relation to one another is important. Minimising edges and maximising core areas of vegetation increases habitat for wildlife. Compact patches of vegetation (i.e. square or circular in shape) have less edges compared to long narrow strips. For more information on 'edge effects' see *Land for Wildlife Note G1 - Healthy Ecosystems and Your Property*.

Predation and competition

The presence of predators or competitors in a corridor may hamper movement or increase the rate of wildlife mortality. Movement of introduced predators such as foxes and feral cats is often aided through the clearing and opening up of native vegetation that occurs when infrastructure such as roads and tracks are constructed in vegetated areas. Some aggressive native fauna species such as Noisy Miners have readily adapted to disturbed environments. They can often dominate road reserves and narrow corridors of vegetation and out-compete other native species.



A corridor planting designed to assist Koalas to move across a property at Mt Barney.

Creating a wildlife corridor

Restoration of landscape linkages is important in aiding the movement of wildlife through an area and ensuring their long-term survival. The principles of the **three R's** should be used for conserving flora and fauna when reconnecting and reconstructing landscapes. These are to **retain** the remnant vegetation that remains, **restore** the quality of degraded habitats and then **revegetate** cleared areas.

To be effective, wildlife corridors that are planted should be comprised of more than one or two rows of trees (the wider the better) and consist of a mixture of endemic tree and shrub species. Seek to re-create the vegetation structure that once existed, for example, a woodland with a shrubby understorey. You might also consider adding other structural features such as large fallen tree branches and logs.

Remember that corridors are designed to allow movement and not necessarily provide habitat for everyday living, so don't evaluate the success of connectivity simply by the species found living there.

What you can do

- ✓ Learn more about the habitat needs of wildlife frequenting your area.
- ✓ Retain patches of remnant and regrowth vegetation ensuring structural diversity, including leaf litter and fallen logs, are maintained.
- ✓ Retain paddock trees, ideally with associated shrubs and logs.
- ✓ Maintain existing wildlife corridors.
- ✓ Concentrate on connecting habitat patches that are at least 1 ha in size separated by no more than 1 km. Ideally, gaps within wildlife corridors will not exceed 100 metres.
- ✓ Avoid opening up and clearing native vegetation to minimise edge-effects.
- ✓ Avoid the construction of unnecessary roads and tracks to minimise the intrusion of feral predators into patches of vegetation.
- ✓ Restore degraded habitats through activities such as weed removal and encouraging natural regeneration.
- ✓ Restrict the movement of pets through bushland areas to minimise disturbance and predation of wildlife.
- ✓ Control feral predators and environmental weeds.

Individual paddock trees can act as 'stepping stones' to assist some wildlife in their movement between patches of habitat.



A Brigalow-Belah corridor on a Land for Wildlife property in the Chinchilla district.

References and further reading

Bennett AF (2003) *Linkages in the Landscape: the role of corridors and connectivity in wildlife conservation*. IUCN.

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Lindenmeyer DB, Claridge A, Hazell D, Michael D, Crane M, MacGregor C and Cunningham R (2003) *Wildlife on Farms: how to conserve native animals*. CSIRO Publishing.

Land for Wildlife is a voluntary program that encourages and assists landholders to provide habitat for wildlife on their properties. For more information about Land for Wildlife South East Queensland, or to download *Land for Wildlife Notes* free of charge, visit www.lfwseq.org.au

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